



## *RE Policy Development in MENA region*

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Regional Centre for Renewable Energies and Energy Efficiency (RCREEE)

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## About RCREEE.....

- RCREEE stands for « Regional Centre for Renewable Energies and Energy Efficiency »
- RCREEE is an independent intergovernmental regional policy think tank, dedicated to the promotion of RE&EE in the Arab countries in MENA region,
- RCREEE set up is sponsored by Germany, Denmark, the EU and Egypt (the host country).

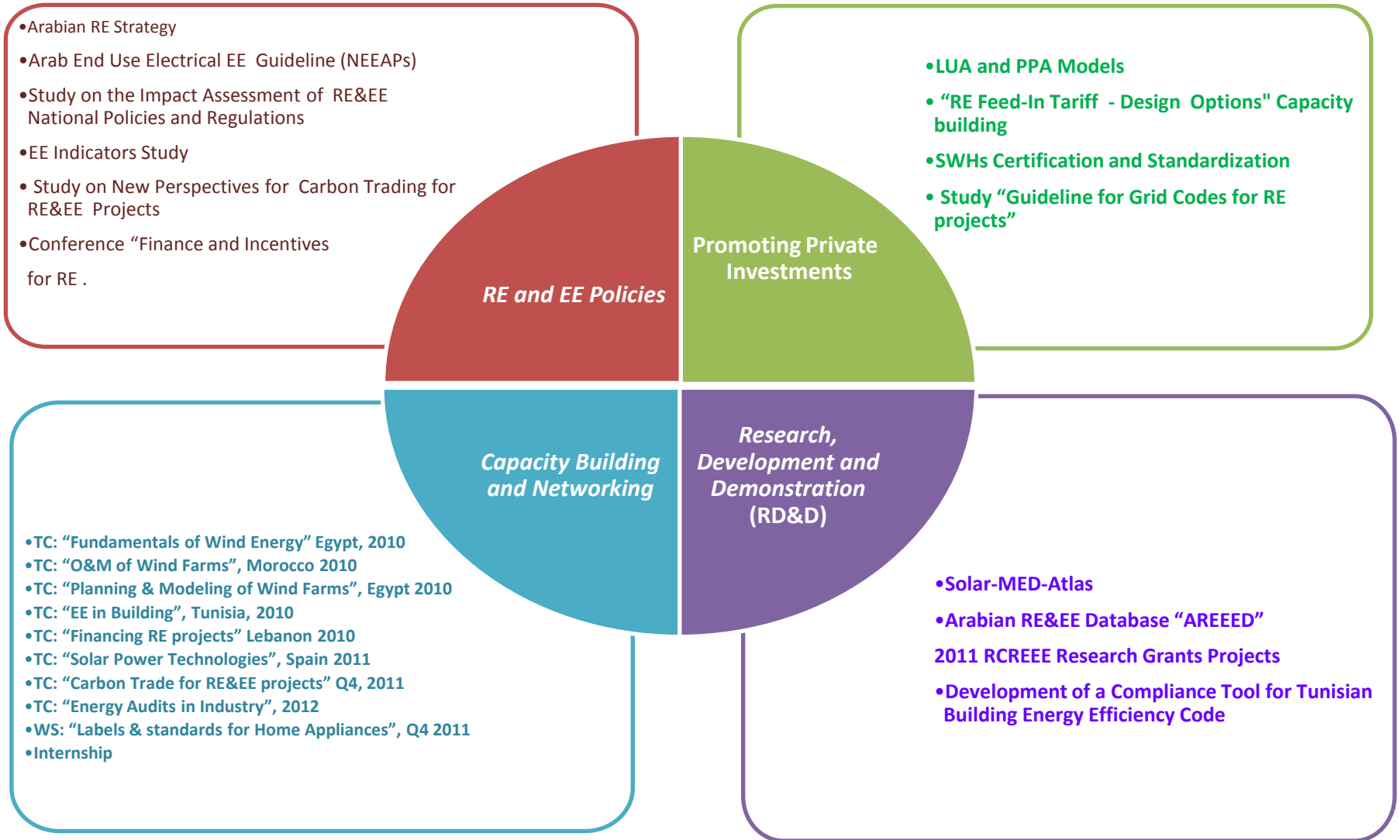


## 13 Member States from Arab MENA Countries

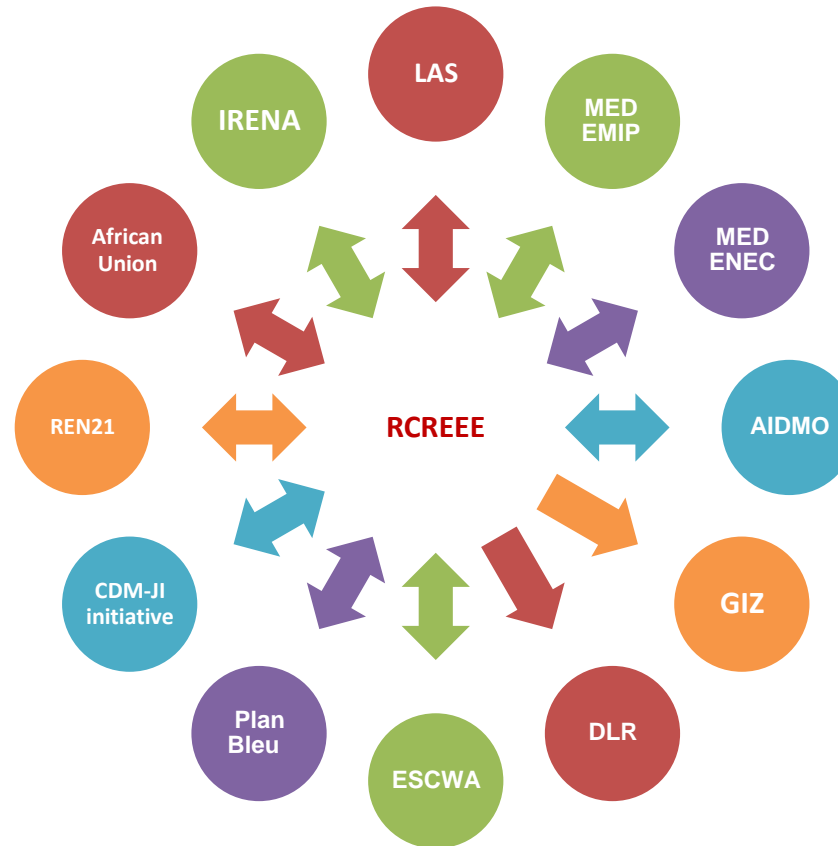
Morocco, Algeria, Tunisia, Libya, Egypt, Sudan, Lebanon, Syria, Palestine, Jordan, Bahrain, Iraq, and Yemen.



## RCREEE Pillars/Work Packages



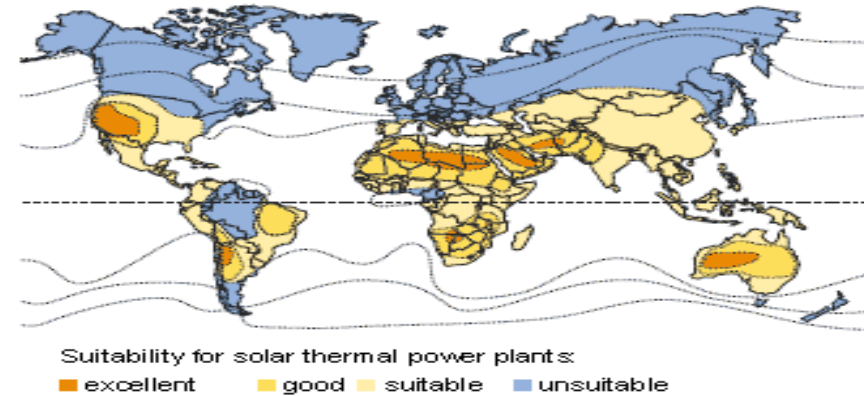
## Cooperation with Regional & International organizations



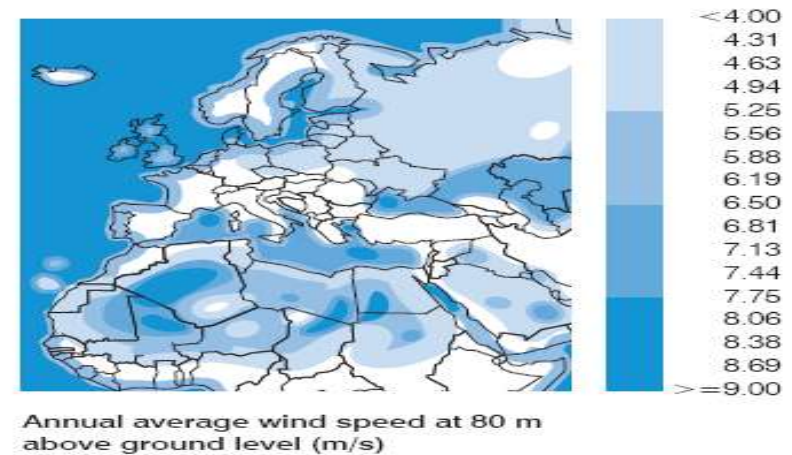
*RCREEE strengthens cooperation with regional and international organization to promote RE&EE in the Arabian region.*

# Resources!!!!

Country	GHI kWh/m <sup>2</sup> /y (for PV)	DNI kWh/m <sup>2</sup> /y (for CSP)
Jordan	2,310	2,700
Lebanon	1,920	2,000
Syria	2,360	2,200
Yemen	2,250	2,200
Algeria	1,970	2,700
Egypt	2,450	2,800
Libya	1,940	2,700
Morocco	2,000	2,600
Tunisia	1,980	2,400
Palestine	2,200	2,100



Country	Full load hours per year (h/y)	Capacity Factor (%)
Algeria	1,789	20
Bahrain	1,360	16
Egypt	3,015	34
Iraq	1,789	20
Jordan	1,483	17
Kuwait	1,605	18
Lebanon	1,176	13
Libya	1,912	22
Morocco	2,708	31
Oman	2,463	28
Qatar	1,421	16
Saudi Arabia	1,789	20
Syria	1,789	20
Tunisia	1,789	20
UAE	1,176	13
Yemen	1,483	17



Source: German Aerospace Agency (DLR)



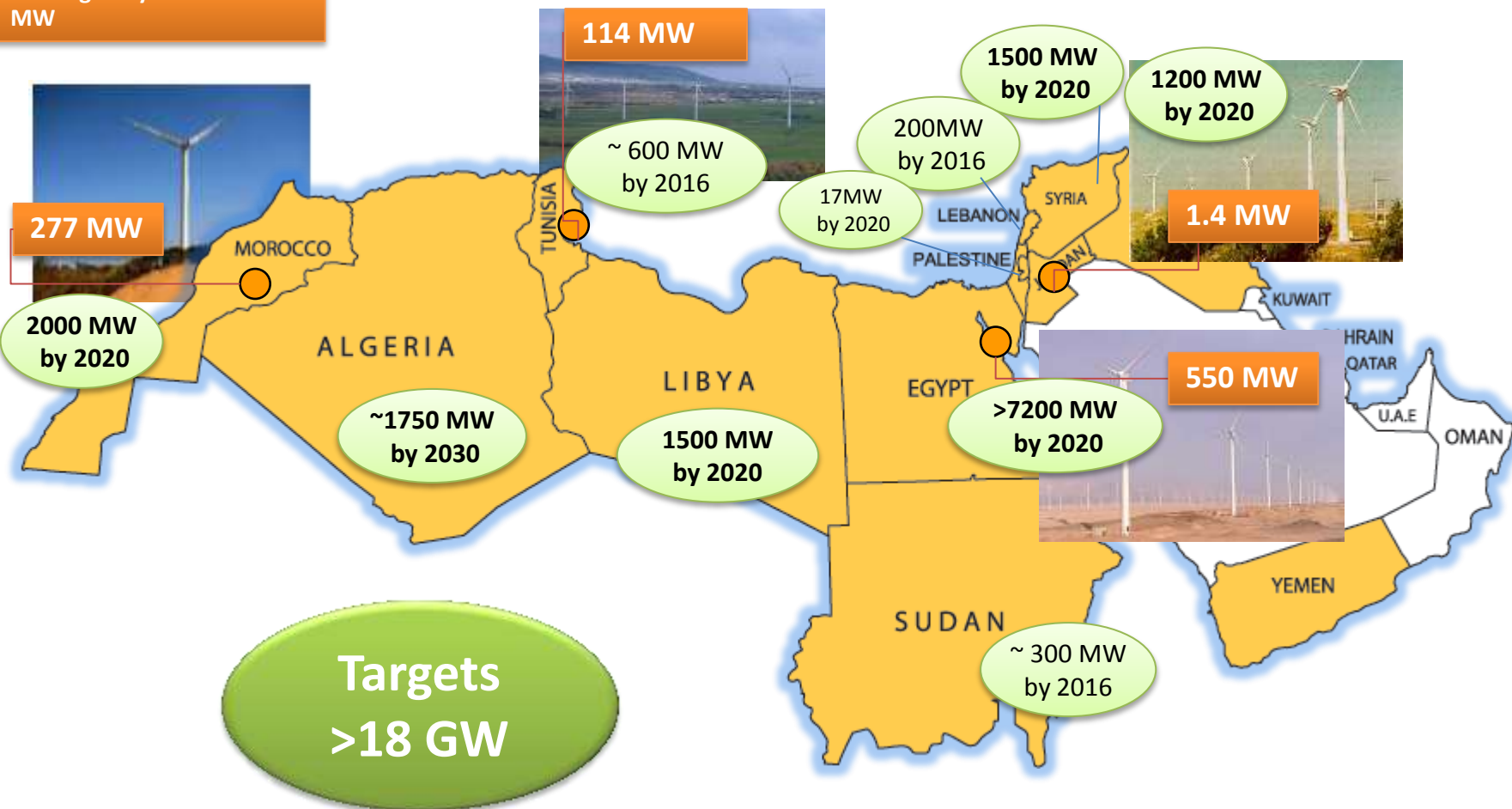
# Existing CSP Projects





# Existing Wind Projects & Targets

Existing early 2011: ~910 MW



## Examples of Policy development in Arab MENA Countries

### Algeria

#### National RE Strategy announced in April 2011.

Targets  
**22GW** RE  
capacity  
between  
2011 and  
2030,

includes  
**12GW** for  
domestic  
demand  
and **10GW**  
for export

**40% of  
domestic  
electricity**  
will be from  
RE sources  
by 2030

**37% of  
solar**  
and  
3% of wind.

#### Key players:

- Ministry of Energy and Mines
- Sonelgas (Utility)
- Algerian electricity and gas regulator
- CDER

#### CSP in national RE Plan

<b>300 MW</b> <b>(2 projects × 150</b> <b>MW/project)</b>	<b>2012- 2013</b>
<b>1200 MW</b> <b>(4 projects total)</b>	<b>2016- 2020</b>
<b>1500 MW</b> <b>(500 MW/year)</b>	<b>2021 - 2023</b>
<b>4200 MW (600</b> <b>MW/year)</b>	<b>2024 - 2030</b>

# Examples of Policy development in Arab MENA Countries

## Algeria

### Existing

Electricity and the distribution of gas Law (2002)

Law (2004) : the promotion of renewable energy

Executive Decree (2004): Priority to using RE and the guarantee of transmission and distribution by the network operators are fixed by the regulation.

Order (2008): RE is given priority access to the grid without curtailment

Finance law for 2010 : national fund for RE financed by oil royalties and other resources and contributions.

Tax advantages (customs duties) may be granted for projects promoting renewable energy.

### Planned

For investments, financial support scheme in addition to FiT/FiP, and low interest bank loans.

Possible condition local partner (Rule of 51% for local and 49% for the foreign investor).

Grid issues: Rules on capacity allocation, congestion management and the use of interconnections

## Examples of Policy development in Arab MENA Countries

### Morocco

#### National Strategy (2009)

RE  
contribution in the  
electricity  
mix will  
reach 42%  
2020

Includes  
14% solar,  
14% wind  
and 14%  
hydro

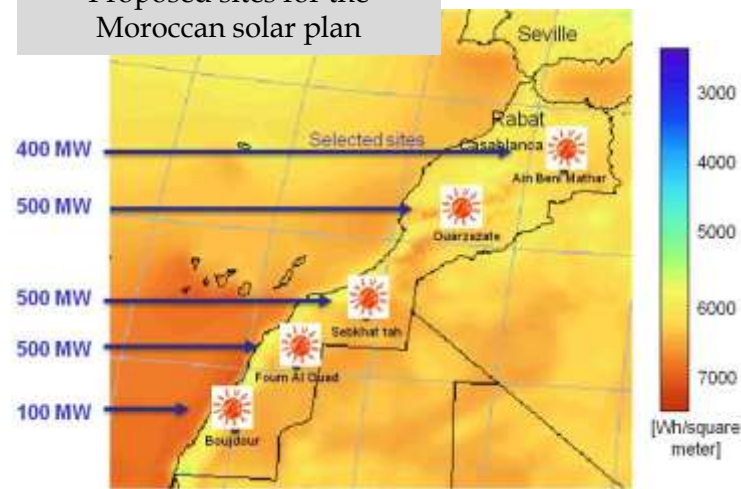
capacity of  
2,000 MW  
of solar  
energy  
2020

2000 MW  
of wind  
energy by  
2020

#### Key players:

- the Ministry for Energy, Mines, Water and Environment
- MASEN
- SEI
- ADEREE
- L'Office National de l'Electricité (ONE)

Proposed sites for the  
Moroccan solar plan



# Examples of Policy development in Arab MENA Countries

## Morocco

### Existing

RE Law 13-09 referring to renewable energy (2010) introduces 4 major innovations: Free competition, Access to grid, export electricity , direct transmission lines.

Law 16-09 for creation of ADEREE (2010)

Law 57 -09 for creation of MASEN (2010)

Creation of Energy Development Fund (FDE) with 1 billion USD coming from grants and creation of Energy Investments Company (SIE) funded by FDE (2010)

### Planned

FiT law

## Examples of Policy development in Arab MENA Countries

### Egypt

#### National Strategy (2008)

targets  
reaching  
20% of  
total  
electricity  
generated  
from RE  
by 2020.

includes  
6% hydro,  
12% Wind  
and 2%  
solar and  
other  
RETs.

The wind  
target  
>7GW.

Solar  
target  
under  
planning  
(2-3GW)

#### Key players:

- Ministry of Electricity & Enenergy
- EgyptERA
- NREA
- EETC/EEHC

#### CSP in national RE Plan

**A state owned concentrating solar power project of 100 MW in Kom-Ombo is under preparation.**

# Examples of Policy development in Arab MENA Countries

**Egypt**

**Existing**

**public investments in state owned project through the government RE arm, NREA**

**private investments based on competitive bidding (only wind currently)**

**Planned**

**RE fund**

**FiT < 50MW.**

**Solar plan**

**Many incentives for wind projects (LUA, PPA, permits, EIA .....)**



## Examples of Policy development in Arab MENA Countries

### Jordan

*RE&EE Law No. (3) Of 2010.  
Including the possibility of  
many incentives.*

*Indicative Reference Price List  
for each type of REs is under  
preparation in accordance  
with Law (FiT!!!)*

### Syria

Electricity Law no. 32 issued  
in 2010

In 2011, the Syrian  
government issued a decree  
with the feed in tariff for  
some preferred RES up to  
10MW

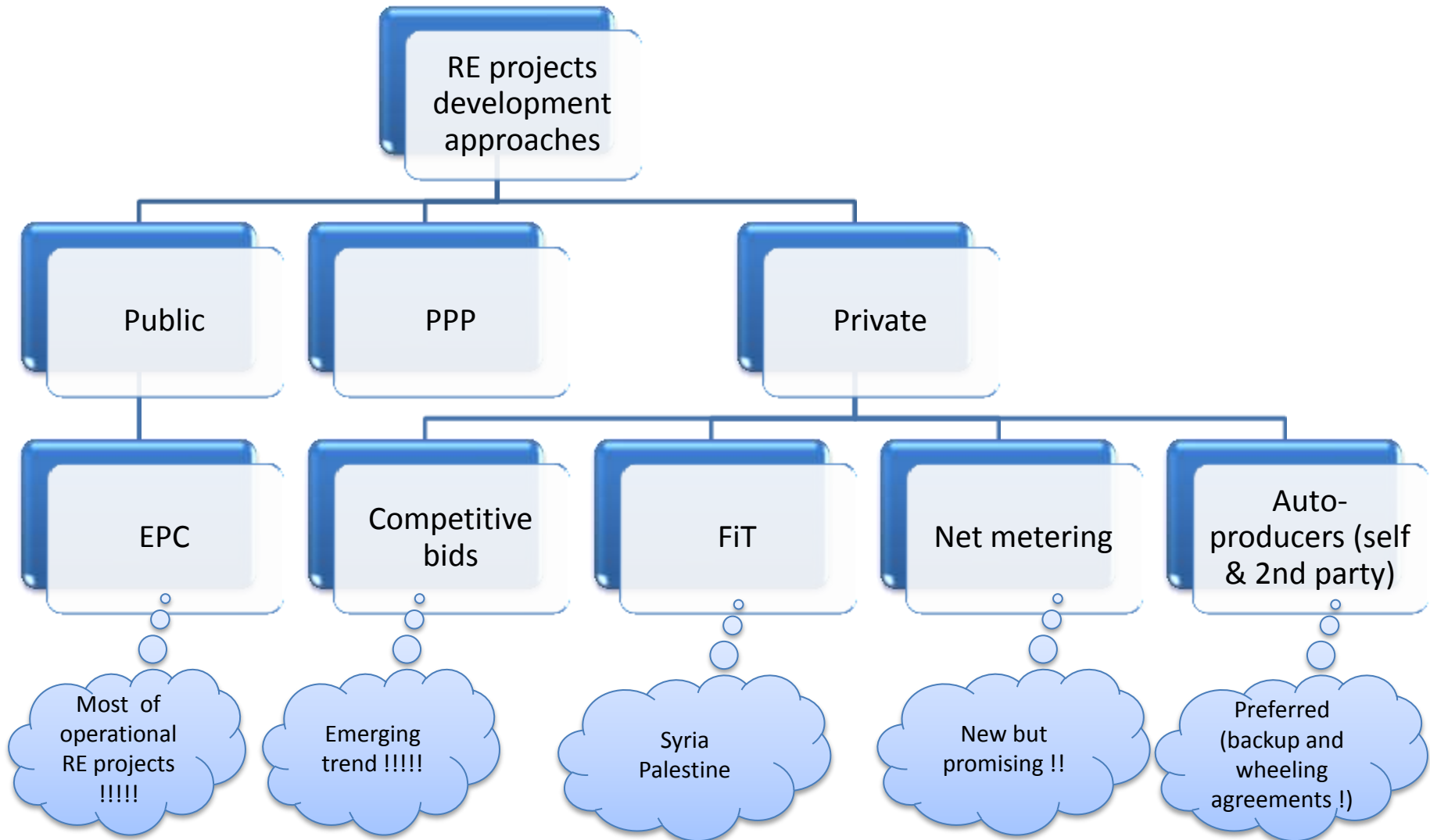
### Lebanon

In December 2011, National  
Energy Efficiency Action Plan  
(NEEAP) 2011-2015 was  
announced confirming national  
target of 12% of RE by 2020

*Net Metering concept is approved  
to allow grid-connected users to  
generate and sell electricity*

NEEAP initiative 7 targets  
Electricity Generation from Solar  
Energy (PV+CSP) → FS

## RE development approaches



Public projects

Most of operational projects  
!!!!

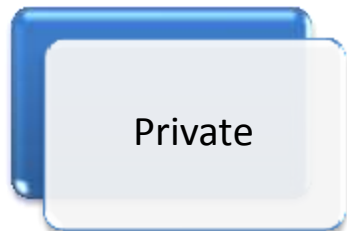
## Public ownership model for the large scale RE projects

### Rationale:

#### Public utilities/agencies could take advantage of :

- Grants and soft loans availed through international cooperation
  - **lower cost debt** compared to private developers,
  - longer debt payment periods
- loan **sovereign guarantees**.
- Public utilities/agency would also require very low ROE compared to private developers.

In general, Public utilities/agencies shall get, for the same installed capacity, a smaller loan than that to be provided to the private developer, i.e. **lower cost RE electricity**.



**Competitive bidding → IPP – BOO approach  
(already adopted in some countries)**

**Rationale:**

**Countries could take advantage of :**

- **Controlling** the increase in RE capacities with reference to the **capacity of transmission system** and capacity of the market to absorb.
- Increasing private investments
- Increasing local manufacturing
- Achieving the **lowest possible prices**.
- Providing the investors with guarantees through long term power purchase agreements

- Sometimes designed as a fast track for private investments to be followed by FiT
- Mostly targeting large-scale projects.

## **RCREEE role**

- **Arabian RE Strategy (LAS)**
- **RE Conference, ARFREE:”Building Financing partnership (arfree) (LAS)**
- **LUA and PPA Models**
- **Solar-MED-Atlas (DLR)**
- **Arabian RE&EE Database “AREEED”**
- **Capacity building**
  - “Fundamentals of Wind Energy” Egypt, 2010
  - “O&M of Wind Farms”, Morocco 2010
  - “Planning & Modeling of Wind Farms”, Egypt 2010
  - “Financing RE projects” Lebanon 2010
  - “Solar Power Technologies”, Spain 2011
  - “RE Feed-In Tariff - Design and Structure for Wind Farms and Solar Plants “

# Thank You

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